

Ⓜ USING ALGEBRA Suppose M is between L and N . Use the Segment Addition Postulate to solve for the variable. Then find the lengths of \overline{LM} , \overline{MN} , and \overline{LN} .

31. $LM = 3x + 8$

$MN = 2x - 5$

$LN = 23$

32. $LM = 7y + 9$

$MN = 3y + 4$

$LN = 143$

33. $LM = \frac{1}{2}z + 2$

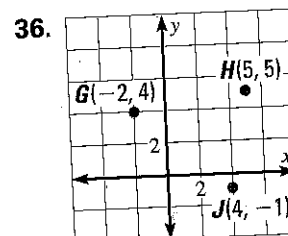
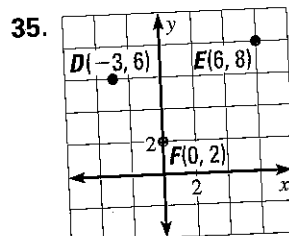
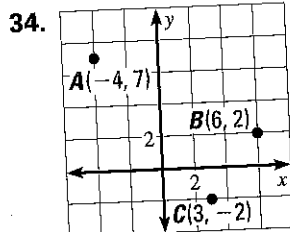
$MN = 3z + \frac{3}{2}$

$LN = 5z + 2$

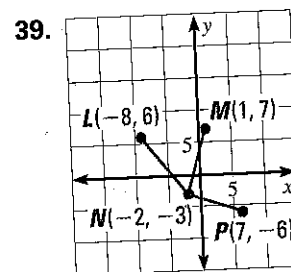
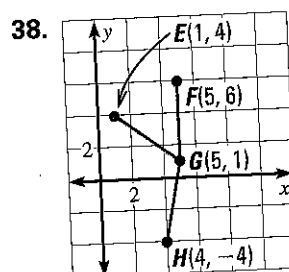
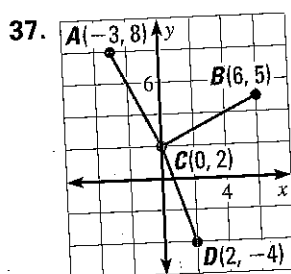
STUDENT HELP

INTERNET **HOMEWORK HELP**
Visit our Web site
www.mcdougallittell.com
for help with Exs. 34–36.

DISTANCE FORMULA Find the distance between each pair of points.



DISTANCE FORMULA Find the lengths of the segments. Tell whether any of the segments have the same length.



CONGRUENCE Use the Distance Formula to decide whether $\overline{PQ} \cong \overline{QR}$.

40. $P(4, -4)$
 $Q(1, -6)$
 $R(-1, -3)$

41. $P(-1, -6)$
 $Q(-8, 5)$
 $R(3, -2)$

42. $P(5, 1)$
 $Q(-5, -7)$
 $R(-3, 6)$

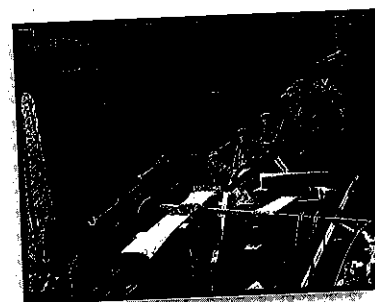
43. $P(-2, 0)$
 $Q(10, -14)$
 $R(-4, -2)$

Ⓜ CAMBRIA INCLINE In Exercises 44 and 45, use the information about the incline railway given below.

In the days before automobiles were available, railways called “incline” brought people up and down hills in many cities. In Johnstown, Pennsylvania, the Cambria Incline was reputedly the steepest in the world when it was completed in 1893. It rises about 514 feet vertically as it moves 734 feet horizontally.

44. On graph paper, draw a coordinate plane and mark the axes using a scale that allows you to plot $(0, 0)$ and $(734, 514)$. Plot the points and connect them with a segment to represent the incline track.

45. Use the Distance Formula to estimate the length of the track.



Workers constructing the Cambria Incline